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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 5/2  
193048 MLRS. MISSILE NUMBER V02-002, ROUND NUMBER V-149/MD-16. --ETC(U)  
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June 1981

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## METEOROLOGICAL DATA REPORT

19304B MLRS  
Missile Number V02-002  
Round Number V-149/MD-16  
8 June 1981

by

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Program Support Coordinator  
Phone No. (505) 679-9568  
AVN No. 349-9568

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

# ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304B MLRS, Missile No. V02-002, Round No. V-149/MD-16 presented in tabular form.		

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## INTRODUCTION

19304B MLRS, Missile Number V02-002, Round Number V-149/MD-16, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1133 MDT, 8 June 1981. The scheduled launch time was 1000 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations:

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}$ C), relative humidity, dew point ( $^{\circ}$ C), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air:

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

## SITE AND ALTITUDE

LC-33	1350 Meters
NICK	2000 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

## SITE AND TIME

WSD	0700 MDT
LC-37	0800 MDT
WSD	0900 MDT
LC-37	1000 MDT
WSD	1133 MDT

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
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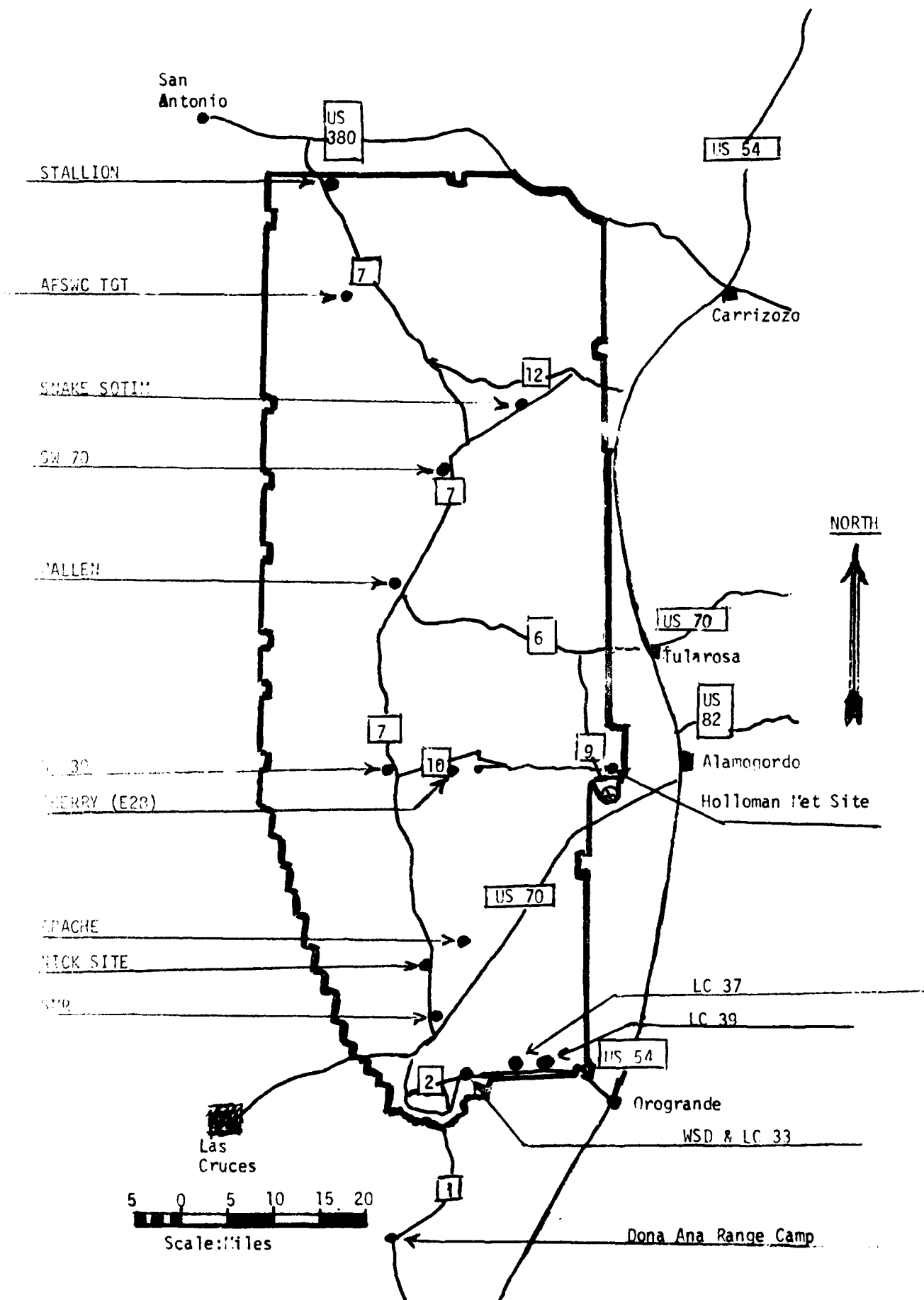






TABLE 2

## LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

1133 MDT

8 June 1981

POLE #1			POLE #2			POLE #3		
X485,874.29			X485,874.93			X485,877.29		
Y185,958.90			Y186,012.00			Y186,116.06		
H4018.74			H4033.57			H4063.92		
38.7 ft. AGL			53.0 ft. AGL			73.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	038	02	T-30	049	03	T-30	062	07
T-20	050	04	T-20	037	04	T-20	063	04
T-10	046	03	T-10	050	06	T-10	087	03
T 0.0	066	05	T 0.0	061	06	T 0.0	092	04
T+10	048	06	T+10	068	05	T+10	083	03

TABLE 3

\*\*

## LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET			LEVEL #2, 32 FEET		
X484,982.64, Y185,057.73, H3983.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
			T-30		
			T-20		
			T-10		
			T 0.0		
			T+10		

LEVEL #3, 102 FEET			LEVEL #4, 202 FEET		
X484,982.64, Y185,057.73, H3983.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
			T-30		
			T-20		
			T-10		
			T 0.0		
			T+10		

Tower Data, equipment malfunction.

TABLE 4

## T-TIME PILOT-BALLOON TRACKED WITH DATA

DATE 8 June 1981

SITE: LC-33  
 TIME: 1133 MDT  
 WSTM COORDINATES:  
 X= 485,135.76  
 Y= 185,919.24  
 H= 3988.57

SITE: NICK  
 TIME: 1133 MDT  
 WSTM COORDINATES:  
 X= 470,734.56  
 Y= 255,775.64  
 H= 4126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	020	07
150	034	09
210	027	08
270	010	05
330	017	04
390	038	04
500	067	04
650	049	07
800	027	07
950	012	08
1150	009	11
1350	020	12
1550	MISG	MISG
1750	MISG	MISG
2000	MISG	MISG

Data obtained from T-9 radar tracked  
 Pilot-Balloon observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	353	04
150	015	07
210	019	08
270	024	08
330	028	08
390	027	08
500	018	09
650	359	09
800	340	09
950	329	11
1150	328	09
1350	295	08
1550	288	11
1750	293	13
2000	287	23

Data obtained from single-Theodolite  
 Pilot-Balloon observation.

AIMING AND T-TIME COMPUTER MET MESSAGES  
8 June 1981

WSD 0700 MDT  
METCM1324064  
081300122877  
00640004 29420877  
01030008 30040867  
02010012 30200843  
03015015 29940805  
04623012 29570760  
05582013 29150718  
06556015 28710677  
07531016 28230637  
08484012 27760600

LC-37 0800 MDT  
METCM1324063  
081400124875  
00347002 29860875  
01542014 30010865  
02006014 30190841  
03047015 30000804  
04599013 29630759  
05567015 29210716  
06546014 28780676  
07523013 28310636  
08490012 27840599

WSD 0900 MDT  
METCM1324064  
081500122878  
00012002 30250878  
01040007 30250868  
02013014 30230844  
03003012 29960806  
04579013 29590761  
05559013 29170718  
06525016 28740677  
07495017 28270637  
08445012 27810600

LC-37 1000 MDT  
METCM1324063  
081600124876  
00027005 30710876  
01025011 30590866  
02005014 30350842  
03609010 30020805  
04555014 29620760  
05531015 29220718  
06510018 28780677  
07484016 28300637

WSD 1133 MDT  
METCM1324064  
081750122878  
00034007 31030878  
01061011 30780868  
02634007 30500845  
03584005 30100807  
04553013 29630763  
05512019 29190720  
06479019 28760678  
07429015 28310639  
08367010 27860602

STATION ALTITUDE 3939.00 FEET MSL  
 8 JUNE 81 0700 HRS MDT  
 ASCENSION NO. 376

SIGNIFICANT LEVEL DATA

1590020376  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 6

PRESSURE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
876.8 3989.0	19.9	5.2	38.0
865.4 4364.9	28.5	7.7	27.0
850.0 4887.9	28.5	1.9	18.0
785.8 7157.3	24.2	-9	19.0
700.0 10427.4	15.8	-4.2	25.0
609.0 14211.4	5.2	-8.3	37.0
566.4 16165.5	-4	-8.8	53.0
549.6 16956.7	-1.0	-20.5	21.0
500.0 19417.4	-5.4	-27.9	15.0
468.0 21110.6	-9.7	-26.7	28.0
400.0 25033.7	-18.2	-37.0	16.0
300.0 31865.9	-35.5	-51.2	18.0

GEODESIC COORDINATES  
32.00043 LAT DEG  
100.37033 LONG DEG

10000.0376  
WHITE SANDS

10000.0376  
WHITE SANDS

TABLE 7

GEODESIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METEC	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	370.8	19.9	38.0	1038.3	668.2	360.0	4.1	1.000270
4000.0	370.5	20.2	37.7	1037.0	668.5			1.000270
4500.0	361.4	28.5	24.7	990.6	670.1			1.000261
5000.0	346.7	28.3	18.0	975.5	677.4			1.000246
5500.0	332.2	27.3	18.3	961.9	676.3			1.000242
6000.0	317.9	26.4	18.5	948.4	675.2			1.000238
6500.0	303.9	25.4	18.7	935.2	674.2			1.000234
7000.0	290.1	24.5	18.9	922.1	673.1			1.000230
7500.0	276.3	23.3	19.6	909.7	671.7			1.000227
8000.0	262.7	22.0	20.5	897.7	670.2			1.000224
8500.0	249.4	20.8	21.5	885.9	668.8			1.000220
9000.0	236.2	19.5	22.4	874.2	667.3			1.000217
9500.0	223.3	18.2	23.3	862.7	665.9	345.7	12.5	1.000214
10000.0	210.7	16.9	24.2	851.4	664.3	337.9	12.9	1.000211
10500.0	198.1	15.6	25.2	840.3	662.8	331.1	13.0	1.000208
11000.0	185.5	14.2	26.8	829.1	661.2	324.5	13.6	1.000205
11500.0	173.1	12.8	28.4	818.1	659.6	318.9	14.4	1.000202
12000.0	160.9	11.4	30.0	807.3	657.9	309.0	15.0	1.000199
12500.0	148.9	10.0	31.6	796.6	656.3	304.1	15.5	1.000196
13000.0	137.2	8.6	33.2	786.1	654.6	300.7	15.9	1.000193
13500.0	125.7	7.2	34.7	775.8	653.0	297.8	16.2	1.000190
14000.0	114.3	5.8	36.3	765.6	651.3	293.0	15.3	1.000187
14500.0	103.0	4.4	38.4	755.4	649.7	287.4	14.5	1.000184
15000.0	91.8	2.9	40.5	745.1	648.0	279.9	12.5	1.000182
15500.0	80.8	1.5	42.6	735.1	646.3	269.7	10.8	1.000180
16000.0	69.9	.1	44.6	725.2	644.6	262.8	9.6	1.000178
16500.0	59.2	-.7	46.6	715.2	643.0	254.0	7.4	1.000171
17000.0	48.7	-1.1	48.6	705.4	641.3	237.5	6.2	1.000162
17500.0	38.2	-2.0	50.6	695.9	639.6	215.3	5.7	1.000159
18000.0	27.9	-2.9	52.5	686.1	637.9	192.7	7.3	1.000156
18500.0	17.6	-3.8	54.4	676.4	636.2	181.4	9.3	1.000153
19000.0	7.3	-4.7	56.3	666.9	634.5	162.4	9.1	1.000150
19500.0	0.0	-5.6	58.2	658.9	632.8	149.7	7.8	1.000148
20000.0	0.0	-6.5	60.1	651.4	631.1	135.7	4.0	1.000146
20500.0	0.0	-7.4	61.9	644.6	629.4	122.2	2.2	1.000144
21000.0	0.0	-8.3	63.7	637.9	627.7	109.7	3.7	1.000143
21500.0	0.0	-9.2	65.5	631.1	626.0	97.3	5.2	1.000140
22000.0	0.0	-10.1	67.3	624.5	624.3	84.8	4.6	1.000137
22500.0	0.0	-11.0	69.1	617.9	622.6	72.3	4.0	1.000135
23000.0	0.0	-11.9	70.9	611.3	620.9	60.0	3.3	1.000132
23500.0	0.0	-12.8	72.7	604.6	619.2	47.5	3.1	
24000.0	0.0	-13.7	74.5	598.0	617.5	35.0		

XX WIND DATA INVALID DUE TO MISSING RAW AZUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL  
A JUNE 81 0700 HRS EDT  
ASCENSION NO. 376

UPPER AIR DATA  
1590020376  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 7 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
23500.0	425.3	-14.9	20.7	573.5	626.2	319.2	3.2	1.000130
24000.0	410.9	-16.0	19.2	564.5	624.9	329.6	3.2	1.000128
24500.0	400.6	-17.0	17.6	555.7	623.5	346.7	3.4	1.000125
25000.0	400.5	-18.1	16.1	547.0	622.2	1.5	4.1	1.000123
25500.0	392.2	-19.4	16.1	538.3	620.7	11.5	5.3	1.000121
26000.0	384.1	-20.6	16.3	529.8	619.1	16.5	5.3	1.000119
26500.0	376.1	-21.7	16.4	521.3	617.6	21.3	4.5	1.000117
27000.0	368.2	-23.2	16.6	513.1	616.0	29.5	3.9	1.000115
27500.0	360.5	-24.4	16.7	504.9	614.4	40.5	3.5	1.000113
28000.0	353.0	-25.7	16.9	497.0	612.9	43.4	3.4	1.000111
28500.0	345.7	-27.0	17.0	489.1	611.3	41.9	3.3	1.000110
29000.0	336.5	-28.2	17.2	481.4	609.7	51.8	3.1	1.000108
29500.0	331.4	-29.5	17.3	473.8	608.1	69.3	3.2	1.000106
30000.0	324.5	-30.8	17.5	466.4	606.5	78.0	2.9	1.000104
30500.0	317.8	-32.0	17.6	459.1	605.0	70.9	1.5	1.000103
31000.0	311.1	-33.3	17.7	451.9	603.4			1.000101
31500.0	304.7	-34.6	17.9	444.8	601.8			1.000099

STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 81 0700 HRS EDT  
ASCENSION NO. 376

MANDATORY LEVELS  
1590020376  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4684.	28.5	1.9	18.	9999.0	9999.0XX
800.0	6637.	25.2	-2	19.	9999.0	9999.0XX
750.0	8480.	20.8	-2.0	21.	346.0	12.5
700.0	10417.	15.8	-4.2	25.	319.7	13.4
650.0	12459.	10.1	-6.0	31.	300.9	15.8
600.0	14619.	4.0	-8.2	40.	277.6	12.0
550.0	16915.	-1.0	-20.1	22.	218.7	5.7
500.0	19390.	-5.4	-27.9	15.	199.2	4.7
450.0	22068.	-11.8	-27.8	25.	337.1	3.8
400.0	24991.	-18.2	-37.8	16.	2.0	4.2
350.0	28212.	-26.2	-43.9	17.	42.7	3.3
300.0	31801.	-35.5	-51.2	18.		

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODLTIC COORDINATES  
32.40175 LAT DEG  
106.31232 LONG DEG

SIGNIFICANT LEVEL DATA  
1530180115  
LC-37

STATION ALTITUDE 4051.37 FEET MSL  
A JUNE 81 0300 HRS EDT  
ASCENSION NO. 115

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
875.2	4051.4	23.9	6.3	37.0
850.0	4095.7	28.1	5.0	23.0
801.5	6598.7	26.0	2.7	22.0
749.6	8517.2	21.4	.6	25.0
700.0	10448.3	16.8	-2.3	27.0
596.0	14853.6	4.5	-7.0	43.0
553.8	16801.6	-1.1	-8.1	59.0
520.1	18743.0	-3.0	-21.7	22.0
500.0	19674.2	-5.0	-27.6	15.0
483.9	20309.0	-5.6	-28.0	15.0
449.4	22198.0	-10.8	-26.9	25.0
400.0	25103.4	-17.0	-36.8	16.0
300.0	31974.0	-34.3	-50.2	18.0



STATION ALTITUDE 4051.37 FEET MSL  
A JUNE 81 0800 HRS MDT  
ASCENSION NO. 115

UPPER AIR DATA  
1500160115  
LC-37

GEOLOGIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

TABLE 10

GEOLOGIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND METERS PER SECOND	DIRECTION DEGREES (TU)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	375.2	23.9	37.0	1021.5	673.0	195.0	1.9	1.000275
4500.0	361.7	26.1	29.6	998.6	675.4	6.8	2.4	1.000265
5000.0	340.9	28.0	22.9	976.0	677.3	3.2	7.2	1.000254
5500.0	332.5	27.4	22.6	961.4	676.6	4.7	12.1	1.000249
6000.0	310.2	20.7	22.4	947.0	675.9	10.1	15.9	1.000244
6500.0	304.2	26.1	22.1	932.9	675.1	12.2	13.3	1.000240
7000.0	290.4	25.0	22.6	920.2	675.9	10.5	11.5	1.000236
7500.0	276.7	23.8	23.4	908.0	672.5	6.0	11.5	1.000232
8000.0	263.3	22.6	24.2	896.0	671.1	351.6	12.2	1.000228
8500.0	250.9	21.4	25.0	884.1	669.7	344.0	13.6	1.000225
9000.0	236.9	20.2	25.5	872.2	668.3	337.0	13.8	1.000221
9500.0	223.9	19.1	26.0	860.5	666.9	326.7	13.9	1.000217
10000.0	211.2	17.9	26.5	848.9	665.6	319.0	14.2	1.000213
10500.0	198.7	16.7	27.2	837.5	664.1	307.9	14.9	1.000210
11000.0	186.0	15.3	29.0	826.4	662.5	305.1	14.6	1.000207
11500.0	173.6	13.9	30.8	815.4	660.9	304.2	14.0	1.000204
12000.0	161.4	12.5	32.6	804.6	659.3	307.8	13.1	1.000201
12500.0	149.5	11.1	34.5	794.0	657.7	305.7	12.5	1.000198
13000.0	137.7	9.7	36.3	783.5	656.0	298.4	12.4	1.000195
13500.0	126.2	8.3	38.1	773.2	654.4	290.0	12.7	1.000192
14000.0	114.9	6.9	39.9	763.0	652.7	281.9	13.4	1.000189
14500.0	103.7	5.5	41.7	753.0	651.1	274.1	13.0	1.000186
15000.0	92.7	4.1	44.2	743.1	649.4	266.9	12.9	1.000183
15500.0	81.7	2.6	48.3	733.0	647.7	262.6	12.5	1.000181
16000.0	70.8	1.2	52.4	723.1	646.0	260.0	11.4	1.000179
16500.0	59.1	-0.2	56.5	713.3	644.3	259.2	9.3	1.000176
17000.0	47.6	-1.4	53.9	703.0	642.9	240.5	7.4	1.000172
17500.0	36.2	-2.0	41.1	691.8	642.0	207.0	7.4	1.000165
18000.0	25.0	-2.7	28.2	680.7	641.0	194.2	8.1	1.000159
18500.0	13.9	-3.4	20.5	669.7	640.0	180.0	8.8	1.000154
19000.0	2.9	-4.2	17.7	659.0	639.0	192.9	6.4	1.000151
19500.0	49.3	-5.0	15.0	648.4	638.1	206.0	4.3	1.000148
20000.0	489.7	-5.4	15.0	636.8	637.6	243.6	3.2	1.000145
20500.0	480.3	-6.1	16.0	626.3	636.8	263.4	3.1	1.000143
21000.0	471.0	-7.5	16.7	617.3	635.1	260.2	2.8	1.000141
21500.0	461.9	-8.9	21.3	608.5	633.5	242.9	2.4	1.000139
22000.0	452.9	-10.3	24.0	599.8	631.8	222.5	2.3	1.000137
22500.0	444.0	-11.4	27.9	590.7	630.4	224.3	2.4	1.000135
23000.0	435.2	-12.5	22.5	581.4	629.1	220.2	2.2	1.000132
23500.0	426.6	-13.6	21.0	572.3	627.8	230.1	1.5	1.000130

GEODETIC COORDINATES  
32.40175 LAT LEG  
106.31232 LONG DEG

UPPER AIR DATA  
1500100115  
LC-37

STATION ALTITUDE 4051.37 FEET MSL  
P JULY 81 0800 HRS MDT  
ASCENSION NO. 115

TABLE 10 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TH) DEGREES (TH)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	410.1	-14.6	19.4	563.3	620.5	283.7	.3	1.000128
24500.0	409.9	-15.7	17.9	554.4	625.2	29.7	1.0	1.000125
25000.0	401.7	-16.8	16.3	545.7	623.9	34.0	2.8	1.000123
25500.0	393.5	-18.0	16.1	537.1	622.4	36.8	3.8	1.000121
26000.0	385.3	-19.2	16.3	528.6	620.8	40.3	3.8	1.000119
26500.0	377.3	-20.5	16.4	520.2	619.3	49.4	3.2	1.000117
27000.0	369.5	-21.8	16.6	512.0	617.7	87.0	2.1	1.000115
27500.0	361.9	-23.0	16.7	503.9	616.2	130.7	2.3	1.000113
28000.0	354.4	-24.3	16.8	496.0	614.6	153.5	3.0	1.000111
28500.0	347.0	-25.5	17.0	488.2	613.1	169.7	2.7	1.000110
29000.0	339.8	-26.8	17.1	480.5	611.5	190.0	2.1	1.000108
29500.0	332.4	-28.1	17.3	472.9	609.9	203.3	1.7	1.000106
30000.0	325.9	-29.3	17.4	465.5	608.4	190.7	.9	1.000104
30500.0	319.1	-30.6	17.6	458.3	606.8	93.5	1.7	1.000103
31000.0	312.5	-31.8	17.7	451.1	605.2			1.000101
31500.0	306.0	-33.1	17.9	444.1	603.6			1.000099

STATION ALTITUDE "051.37 FEET MSL  
 8 JUNE 61 0800 HRS "DT"  
 ASCENSION NO. 115

MANDATORY LEVELS  
 1590180115  
 LC-37

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LONG DEG

TABLE 11

PRESSURE GRADIENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FLEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4892.	28.1	5.0	23.	9.0	0.2
800.0	6647.	25.9	2.0	22.	13.0	12.5
750.0	8474.	21.4	.6	25.	344.6	13.6
700.0	10438.	16.8	-2.3	27.	308.7	14.8
650.0	12488.	11.1	-4.0	34.	305.8	12.5
600.0	14657.	5.0	-6.7	42.	271.4	13.0
550.0	16960.	-1.3	-8.3	54.	242.2	7.5
500.0	19436.	-5.0	-27.6	15.	205.9	4.5
450.0	22130.	-10.7	-26.9	25.	223.1	2.3
400.0	25066.	-17.0	-36.8	16.	35.0	3.1
350.0	28302.	-25.0	-42.9	17.	163.8	2.9
300.0	31909.	-34.3	-50.2	18.		

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

SIGNIFICANT LEVEL DATA  
1590020377  
WHITE SANDS

ION ALTITUDE 3989.00 FEET MSL  
8 JUNE 81 0900 HRS MDT  
ASCENSION NO. 377

TABLE 12

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT	REL. HUM.
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	PERCENT
878.3	3989.0	28.0	8.3	29.0
866.3	4389.3	28.2	4.5	22.0
850.0	4942.3	28.8	2.1	18.0
765.2	7970.6	22.2	-2.5	19.0
700.0	10480.1	15.8	-6.5	21.0
588.2	15221.0	2.8	-9.1	41.0
562.4	16408.0	-6	-8.5	55.0
554.0	16803.3	-1.1	-12.3	42.0
528.8	18020.0	-3.1	-21.8	22.0
508.3	19044.9	-5.3	-27.1	16.0
500.0	19470.1	-5.0	-27.6	15.0
496.2	19667.3	-5.0	-27.6	15.0
400.0	25102.4	-18.0	-38.2	15.0
307.0	31413.5	-33.6	-50.1	17.0
300.0	31944.8	-35.0		
258.0	35354.8	-42.5		
250.0	36053.4	-44.0		
214.6	39381.0	-50.6		
200.0	40886.6	-52.9		
171.0	44171.4	-59.0		
166.4	44735.4	-58.9		
158.0	45401.3	-61.2		
150.0	46862.9	-62.0		
115.2	52150.3	-69.6		
103.5	54248.8	-71.2		
100.0	54921.4	-70.5		
89.2	57165.2	-69.6		
83.4	58483.1	-71.2		
70.0	61935.9	-67.4		
50.0	68786.9	-58.0		
40.0	73492.8	-52.6		
32.8	77745.0	-51.2		

UPPER AIR DATA  
1590020377  
WHITE SANDS  
TABLE 13

ON ALTITUDE 3989.40 FEET MSL  
JUNE 81  
0900 HRS NOT  
ASCENSION NO. 377

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	878.3	28.0	29.0	1011.2	677.7	10.0	1.9	1.000271
4000.0	878.0	28.0	28.8	1010.8	677.7	9.9	2.0	1.000271
4500.0	863.0	28.3	21.2	993.7	677.6	8.3	5.8	1.000256
5000.0	848.3	28.7	18.0	976.0	677.9	7.9	9.6	1.000247
5500.0	833.7	27.6	18.2	962.8	676.6	7.8	13.4	1.000243
6000.0	819.4	26.5	.5	949.8	675.4	4.3	12.9	1.000238
6500.0	805.3	25.4	18.5	937.0	674.1	358.5	11.1	1.000234
7000.0	791.4	24.3	-1.0	924.3	672.8	345.4	10.3	1.000230
7500.0	777.8	23.2	-1.8	911.9	671.6	333.6	10.5	1.000226
8000.0	764.4	22.1	-2.5	899.6	670.3	329.7	12.4	1.000222
8500.0	751.0	20.8	-3.3	887.7	668.8	326.0	13.7	1.000219
9000.0	737.8	19.6	-4.1	876.0	667.3	321.8	14.2	1.000215
9500.0	724.8	18.3	-4.9	864.4	665.8	316.4	14.3	1.000212
10000.0	712.0	17.0	-5.7	853.0	664.3	307.6	13.8	1.000208
10500.0	699.5	15.7	-6.4	841.8	662.8	300.2	13.9	1.000205
11000.0	688.8	14.4	-6.4	830.4	661.3	296.8	14.7	1.000202
11500.0	674.3	13.0	-6.4	819.1	659.7	293.2	15.4	1.000200
12000.0	662.0	11.6	-6.5	808.1	658.1	289.3	16.1	1.000198
12500.0	650.0	10.3	-6.7	797.2	656.6	284.6	16.2	1.000195
13000.0	638.2	8.9	-7.0	786.5	655.0	277.8	15.5	1.000192
13500.0	626.6	7.5	-7.4	776.0	653.4	270.6	14.6	1.000190
14000.0	615.2	6.1	-7.8	765.7	651.7	262.7	13.3	1.000187
15000.0	593.0	3.4	-8.3	755.5	650.1	255.5	12.2	1.000184
15500.0	582.0	2.0	-8.9	745.5	648.5	251.1	10.7	1.000182
16000.0	571.1	.6	-8.6	735.4	646.9	245.1	9.1	1.000179
16500.0	560.4	-7.7	-8.9	725.4	645.2	235.2	7.1	1.000178
17000.0	549.8	-1.4	-9.3	715.2	643.7	213.4	6.4	1.000175
17500.0	539.4	-2.2	-13.6	703.9	642.7	189.0	7.8	1.000168
18000.0	529.2	-3.1	-17.2	692.9	641.6	181.6	9.7	1.000163
18500.0	519.1	-4.1	-21.6	682.1	640.5	180.0	11.4	1.000158
19000.0	509.2	-5.2	-24.2	671.8	639.2	185.2	10.0	1.000154
19500.0	499.4	-5.0	-26.9	661.7	637.9	196.0	7.8	1.000151
20000.0	489.7	-5.8	-27.6	648.5	638.1	216.3	5.1	1.000148
20500.0	480.1	-7.0	-28.2	637.8	637.1	261.3	3.9	1.000145
21000.0	470.7	-8.2	-29.2	628.1	635.7	273.8	3.4	1.000143
21500.0	461.4	-9.4	-30.2	618.6	634.3	280.0	2.7	1.000140
22000.0	452.4	-10.6	-31.1	609.2	632.8	267.8	2.3	1.000138
22500.0	443.5	-11.8	-32.1	600.0	631.4	244.6	2.2	1.000136
23000.0	434.8	-13.0	-33.1	590.9	629.9	240.0	2.9	1.000134
			-34.1	582.0	628.5	242.2	3.8	1.000132

STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 81 0900 HRS NDT  
ASCENSION NO. 377

UPPER AIR DATA  
1590020377  
WHITE SANDS

GEODETTIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	426.2	-14.2	-35.1	15.0	573.2	627.0	239.9	4.0	1.000129
24000.0	417.9	-15.4	-36.0	15.0	564.6	625.6	236.0	4.0	1.000127
24500.0	409.7	-16.6	-37.0	15.0	556.1	624.1	215.8	3.5	1.000125
25000.0	401.6	-17.8	-38.0	15.0	547.7	622.7	186.0	3.7	1.000123
25500.0	393.4	-19.0	-38.9	15.1	539.1	621.2	172.7	4.4	1.000121
26000.0	385.2	-20.2	-39.9	15.3	530.5	619.6	168.4	5.1	1.000119
26500.0	377.2	-21.5	-40.8	15.4	522.0	618.1	168.6	4.7	1.000117
27000.0	369.4	-22.7	-41.7	15.6	513.7	616.6	172.9	3.5	1.000115
27500.0	361.7	-23.9	-42.7	15.8	505.6	615.1	169.2	2.5	1.000113
28000.0	354.2	-25.2	-43.6	15.9	497.6	613.5	145.7	1.7	1.000112
28500.0	346.9	-26.4	-44.5	16.1	489.7	612.0	111.9	1.7	1.000110
29000.0	339.7	-27.6	-45.5	16.2	481.9	610.5	95.8	2.4	1.000108
29500.0	332.6	-28.9	-46.4	16.4	474.3	608.9	86.5	3.0	1.000106
30000.0	325.7	-30.1	-47.4	16.6	466.9	607.4	79.1	3.4	1.000105
30500.0	319.0	-31.3	-48.3	16.7	459.5	605.8	61.8	3.5	1.000103
31000.0	312.4	-32.6	-49.3	16.9	452.3	604.3	37.1	3.7	1.000101
31500.0	305.8	-33.8	-51.8	14.2**	445.2	602.7	22.1	4.3	1.000099
32000.0	299.3	-35.1			438.0	601.0	13.1	4.7	1.000098
32500.0	292.7	-36.2			430.4	599.7	8.2	5.0	1.000096
33000.0	286.3	-37.3			423.0	598.3	10.0	4.7	1.000094
33500.0	280.1	-38.4			415.6	596.9	12.3	4.5	1.000093
34000.0	273.9	-39.5			408.5	595.5	17.4	4.7	1.000091
34500.0	267.9	-40.6			401.4	594.1	22.0	5.0	1.000089
35000.0	262.1	-41.7			394.5	592.7	24.9	5.1	1.000088
35500.0	256.3	-42.8			387.7	591.3	27.5	5.1	1.000086
36000.0	250.6	-43.9			380.8	589.9	30.3	4.9	1.000085
36500.0	244.9	-44.9			373.8	588.6	33.4	4.6	1.000083
37000.0	239.4	-45.9			366.9	587.3	34.7	4.4	1.000082
37500.0	233.9	-46.9			360.2	586.0	32.5	4.2	1.000080
38000.0	228.6	-47.9			353.5	584.7	25.6	3.7	1.000079
38500.0	223.5	-48.9			347.1	583.5	337.4	2.3	1.000077
39000.0	218.4	-49.8			340.7	582.2	285.3	3.5	1.000076
39500.0	213.4	-50.8			334.3	580.9	266.4	6.8	1.000074
40000.0	208.5	-51.5			327.7	579.9	260.2	10.4	1.000073
40500.0	203.7	-52.3			321.2	578.9	264.8	12.4	1.000072
41000.0	198.9	-53.1			314.9	577.9	269.7	14.3	1.000070
41500.0	194.2	-54.0			308.8	576.7	273.2	16.3	1.000069
42000.0	189.7	-55.0			302.8	575.4	275.9	18.3	1.000067
42500.0	185.2	-55.9			296.9	574.2	276.7	20.2	1.000066
43000.0	180.8	-56.8			291.2	573.0	276.1	21.8	1.000065

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

UPPER AIR DATA  
1590020377  
WHITE SANDS

TABLE 13 CON'T

STATION ALTITUDE 3984.00 FEET MSL  
3 JUNE 81  
ASCENSION NO. 377

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	176.6	-57.8		285.6	571.8	273.5	23.6	1.000064
44000.0	172.4	-58.7		280.0	570.5	268.0	25.5	1.000062
44500.0	168.3	-58.9		273.7	570.2	263.6	27.6	1.000061
45000.0	164.3	-59.5		267.8	569.5	260.8	29.4	1.000060
45500.0	160.3	-60.5		262.7	568.0	258.3	31.2	1.000059
46000.0	156.5	-61.3		257.4	567.0	260.2	30.9	1.000057
46500.0	152.7	-61.7		251.6	566.5	262.5	30.4	1.000056
47000.0	149.0	-62.2		246.0	565.8	263.3	30.7	1.000055
47500.0	145.3	-62.9		240.8	564.9	263.6	31.2	1.000054
48000.0	141.7	-63.6		235.6	563.9	263.8	31.7	1.000052
48500.0	138.2	-64.4		230.6	562.9	263.7	32.0	1.000051
49000.0	134.8	-65.1		225.7	562.0	263.8	32.0	1.000050
49500.0	131.5	-65.8		220.9	561.0	264.1	30.6	1.000049
50000.0	128.3	-66.5		216.2	560.0	264.4	29.2	1.000048
50500.0	125.1	-67.2		211.6	559.0	262.3	28.9	1.000047
51000.0	122.0	-67.9		207.1	558.1	259.8	28.9	1.000046
51500.0	119.0	-68.7		202.7	557.1	258.4	28.5	1.000045
52000.0	116.1	-69.4		198.4	556.1	258.6	27.4	1.000044
52500.0	113.2	-69.9		193.9	555.5	259.0	26.4	1.000043
53000.0	110.3	-70.2		189.4	554.9	263.7	25.4	1.000042
53500.0	107.5	-70.6		185.0	554.4	268.8	24.7	1.000041
54000.0	104.8	-71.0		180.6	553.9	273.9	24.1	1.000040
54500.0	102.2	-70.9		176.0	554.0	279.1	23.7	1.000039
55000.0	99.6	-70.5		171.2	554.6	284.8	21.3	1.000038
55500.0	97.1	-70.3		166.7	554.9	293.3	17.1	1.000037
56000.0	94.7	-70.1		162.4	555.2	304.7	13.8	1.000036
56500.0	92.3	-69.9		158.1	555.5	306.7	13.0	1.000035
57000.0	90.0	-69.7		154.0	555.7	309.0	12.2	1.000034
57500.0	87.7	-70.0		150.4	555.3	314.4	12.6	1.000033
58000.0	85.5	-70.6		147.0	554.4	320.2	13.6	1.000033
58500.0	83.3	-71.2		143.7	553.7	327.0	14.0	1.000032
59000.0	81.2	-70.6		139.7	554.4	339.4	13.2	1.000031
59500.0	79.2	-70.1		135.9	555.2	352.8	13.0	1.000030
60000.0	77.2	-69.5		132.1	555.9	358.7	11.4	1.000029
60500.0	75.3	-69.0		128.5	556.7	5.5	9.7	1.000029
61000.0	73.4	-68.4		124.9	557.4	18.7	8.1	1.000028
61500.0	71.6	-67.9		121.5	558.2	40.2	7.4	1.000027
62000.0	69.8	-67.3		118.1	558.9	64.6	7.5	1.000026
62500.0	68.1	-66.6		114.8	559.9	99.5	8.0	1.000026
63000.0	66.4	-65.9		111.7	560.8	122.8	10.8	1.000025

STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 81  
ASCENSION NO. 377

UPPER AIR DATA  
1590020377  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
63500.0	64.8	-65.3		108.6	561.7	136.8	13.1	1.000024
64000.0	63.3	-64.6		105.6	562.6	147.1	15.3	1.000024
64500.0	61.7	-63.9		102.7	563.6	151.9	16.9	1.000023
65000.0	60.2	-63.2		99.9	564.5	148.3	16.0	1.000022
65500.0	58.8	-62.5		97.2	565.4	144.3	15.2	1.000022
66000.0	57.3	-61.8		94.5	566.3	136.7	14.1	1.000021
66500.0	55.9	-61.1		91.9	567.3	127.3	13.2	1.000020
67000.0	54.6	-60.5		89.4	568.2	117.3	12.7	1.000020
67500.0	53.3	-59.8		87.0	569.1	107.7	12.5	1.000019
68000.0	52.0	-59.1		84.6	570.0	98.0	12.6	1.000019
68500.0	50.7	-58.4		82.3	570.9	96.2	12.5	1.000018
69000.0	49.3	-57.8		80.1	571.8	97.3	12.3	1.000018
69500.0	48.3	-57.2		78.0	572.5	99.0	12.1	1.000017
70000.0	47.2	-56.6		75.9	573.3	105.0	13.3	1.000017
70500.0	46.1	-56.0		74.0	574.0	109.9	14.6	1.000016
71000.0	45.0	-55.5		72.0	574.8	111.2	15.1	1.000016
71500.0	44.0	-54.9		70.2	575.6	108.1	14.2	1.000016
72000.0	42.9	-54.3		68.3	576.3	104.6	13.4	1.000015
72500.0	41.9	-53.7		66.6	577.1	96.9	19.7	1.000015
73000.0	40.9	-53.2		64.8	577.8	92.8	28.0	1.000014
73500.0	40.0	-52.6		63.2	578.6	90.7	33.9	1.000014
74000.0	39.1	-52.4		61.7	578.8	89.2	29.5	1.000014
74500.0	38.2	-52.3		60.2	579.0	87.1	25.1	1.000013
75000.0	37.3	-52.1		58.8	579.2	85.9	17.8	1.000013
75500.0	36.4	-51.9		57.4	579.4	85.8	8.4	1.000013
76000.0	35.6	-51.8		56.0	579.6	268.3	1.1	1.000012
76500.0	34.8	-51.6		54.7	579.9			1.000012
77000.0	34.0	-51.4		53.4	580.1			1.000012
77500.0	33.2	-51.3		52.1	580.3			1.000012



STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 81 0900 HRS N T  
ASCENSION NO. 377

MANDATORY LEVELS  
1590020377  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 14

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION (TN)	SPEED KNOTS
850.0	4939.	28.8	2.1	18.	7.9	9.2
800.0	6692.	25.0	-5	19.	353.7	10.7
750.0	8533.	20.8	-3.4	19.	325.7	13.7
700.0	10470.	15.8	-6.5	21.	300.4	13.9
650.0	12512.	10.3	-6.7	30.	284.3	16.2
600.0	14673.	4.3	-8.5	39.	254.0	11.6
550.0	16971.	-1.4	-13.6	39.	189.6	7.7
500.0	19442.	-5.0	-27.6	15.	213.9	5.3
450.0	22131.	-10.9	-32.4	15.	237.6	2.2
400.0	25060.	-18.0	-38.2	15.	181.3	3.8
350.0	28284.	-25.9	-44.1	16.	121.1	1.5
300.0	31880.	-35.0			14.2	4.7
250.0	35973.	-44.0			30.5	4.9
200.0	40786.	-52.9			268.5	13.8
175.0	43579.	-58.1			271.5	24.2
150.0	46735.	-62.0			263.2	30.5
125.0	50388.	-67.2			262.2	28.9
100.0	54750.	-70.5			283.5	2.3
80.0	59100.	-70.3			346.5	3.0
70.0	61722.	-67.4			58.6	7.6
60.0	64802.	-63.1			148.3	16.0
50.0	68527.	-58.0			96.8	12.4
40.0	73198.	-52.6			90.8	34.3

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL.  
 8 JUNE 81 1000 HRS TDT  
 ASCENSION NO. 116

SIGNIFICANT LEVEL DATA  
 150016011,  
 LC-37

GEOGRAPHIC COORDINATES  
 32.40175 LAT DEG  
 106.51232 LON DEG

TABLE 15

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT DEGREES	REL. HUM. PERCENT
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	
876.1	4051.4	32.9	5.5	18.0
850.0	4940.4	29.9	1.4	16.0
700.0	10495.2	17.0	-6.8	19.0
618.8	13085.0	7.0	-9.8	29.0
592.4	15057.1	3.7	-8.9	39.0

STATION ALTITUDE 4051.37 FEET MSL  
8 JUNE 81 1000 HRS MDT  
ASCENSION NO. 116

UPPER AIR DATA  
1500100110  
LC-37

GEOULTIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (IN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
4051.4	870.1	32.9	5.5	18.0	993.4	682.9	13.0	5.1	1.000258
4500.0	862.8	31.4	3.4	17.0	983.6	681.0	0.5	6.4	1.000251
5000.0	840.2	29.8	1.3	16.0	972.6	679.1	.5	7.9	1.000244
5500.0	833.5	28.6	.6	16.3	959.5	677.7	350.5	9.6	1.000240
6000.0	819.1	27.4	-.1	16.6	940.6	676.4	353.7	11.2	1.000236
6500.0	804.9	26.3	-.8	16.8	933.9	675.0	344.7	10.6	1.000232
7000.0	791.0	25.1	-1.5	17.1	921.4	673.7	333.5	1.0	1.000229
7500.0	777.3	24.0	-2.3	17.4	909.1	672.4	322.9	11.4	1.000225
8000.0	763.8	22.8	-3.0	17.7	896.9	671.0	314.3	13.2	1.000221
8500.0	750.6	21.6	-3.7	17.9	884.9	669.7	310.9	13.7	1.000217
9000.0	737.6	20.5	-4.5	18.2	873.1	668.3	307.4	14.3	1.000214
9500.0	724.8	19.3	-5.2	18.5	861.5	667.0	300.1	14.3	1.000210
10000.0	712.2	18.1	-6.0	18.7	850.0	665.6	304.8	14.4	1.000207
10500.0	699.9	17.0	-6.8	19.0	838.7	664.2	303.1	14.9	1.000203
11000.0	687.3	15.5	-7.0	20.5	827.8	662.6	301.6	15.4	1.000201
11500.0	674.9	14.0	-7.3	22.0	817.0	660.9	293.0	16.5	1.000196
12000.0	662.7	12.6	-7.7	23.4	806.5	659.1	285.2	17.9	1.000193
12500.0	650.8	11.1	-8.2	24.9	796.1	657.4	270.1	19.2	1.000190
13000.0	639.1	9.6	-8.7	26.4	785.9	655.7	268.2	20.8	1.000187
13500.0	627.5	8.1	-9.3	27.9	775.8	654.0	264.1	16.7	1.000185
14000.0	616.2	6.7	-9.7	30.0	765.7	652.3			1.000183
14500.0	604.8	5.3	-9.2	34.2	755.3	650.7			1.000181
15000.0	593.7	3.9	-9.0	38.5	745.1	649.0			

STATION ALTITUDE 4051.37 FEET MSL  
 8 JUNE 81 1000 HRS MDT  
 ASCENSION NO. 116

NAVIGATORY LEVELS  
 1590180116  
 LC-37

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

TABLE 17

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4937.	29.9	1.4	16.		1.1	7.7
800.0	6696.	25.9	-1.1	17.		340.4	10.3
750.0	8541.	21.6	-3.8	18.		310.6	13.8
700.0	10485.	17.0	-6.8	19.		303.2	14.9
650.0	12534.	11.0	-8.2	25.		275.4	19.3
600.0	14698.	4.7	-9.1	30.			

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

SIGNIFICANT LEVEL DATA

1590020376  
WHITE SANDS

TABLE 18

STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 61 1733 HRS EDT  
ASCENSION NO. 578

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	REL. HUM.
MILLIBARS	FEET	DEGREES CENTIGRADE	PERCENT
878.1	3989.0	4.3	14.0
872.4	4182.7	6.2	18.0
850.0	4650.7	4.2	18.0
783.4	7321.2	-1.1	20.0
700.0	10506.5	-5.1	23.0
588.4	15244.9	-10.6	35.0
545.4	17251.1	-21.9	19.0
500.0	19511.0	-5.4	17.0
400.0	25134.5	-18.0	18.0
300.0	31989.1	-34.1	18.0

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

UPPER AIR DATA  
15000200370  
WHITE SANDS

TABLE 19

STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 61 1133 HRS MDT  
ASCENSION NO. 378

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	873.1	36.0	14.0	985.9	660.2	20.0	7.0	1.000253
4000.0	877.8	35.9	14.2	995.9	660.1	19.8	7.0	1.000253
4500.0	863.1	32.8	18.0	978.8	682.8	11.0	5.9	1.000254
5000.0	848.6	31.3	18.0	967.6	681.0	.2	5.1	1.000249
5500.0	834.1	29.8	18.5	955.9	679.2	344.9	4.5	1.000245
6000.0	819.8	28.3	18.9	944.4	677.5	326.7	4.2	1.000241
6500.0	805.9	26.8	19.3	933.1	675.7	321.9	5.0	1.000237
7000.0	792.1	25.3	19.7	921.9	674.0	320.4	7.2	1.000232
7500.0	776.5	23.8	20.2	910.5	672.3	320.3	11.5	1.000228
8000.0	764.8	22.5	20.6	898.6	670.8	312.8	13.3	1.000225
8500.0	751.4	21.2	21.1	886.9	669.3	301.7	15.7	1.000221
9000.0	736.3	19.9	21.6	875.3	667.8	294.3	18.2	1.000217
9500.0	723.3	18.6	22.1	863.9	666.3	290.5	19.5	1.000214
10000.0	712.6	17.3	22.5	852.7	664.8	286.2	19.9	1.000210
10500.0	700.2	16.0	23.0	841.6	663.2	280.8	20.1	1.000206
11000.0	687.5	14.7	24.2	830.2	661.7	274.0	19.2	1.000204
11500.0	675.0	13.4	25.5	818.9	660.1	267.6	18.4	1.000201
12000.0	662.7	12.0	26.8	807.8	658.6	261.4	17.7	1.000198
12500.0	650.7	10.7	28.0	796.9	657.0	254.5	16.7	1.000195
13000.0	638.9	9.4	29.3	786.2	655.5	246.8	15.9	1.000192
13500.0	627.3	8.0	30.6	775.6	653.9	237.5	13.7	1.000189
14000.0	615.9	6.7	31.8	765.2	652.4	224.6	11.7	1.000186
14500.0	604.7	5.4	33.1	754.9	650.8	206.4	10.3	1.000183
15000.0	593.7	4.1	34.4	744.8	649.2	196.7	11.0	1.000180
15500.0	582.7	2.8	33.0	734.5	647.7	193.3	12.2	1.000176
16000.0	571.8	1.6	29.0	724.0	646.2	193.6	12.9	1.000171
16500.0	561.1	.5	25.0	713.7	644.7	194.7	13.6	1.000167
17000.0	550.6	-.7	21.0	703.5	643.3	197.1	14.2	1.000163
17500.0	540.2	-1.8	18.8	692.9	642.0	200.8	14.5	1.000160
18000.0	529.9	-2.7	18.3	682.0	640.9	200.5	14.5	1.000157
18500.0	519.8	-3.6	17.9	671.3	639.8	211.7	13.1	1.000154
19000.0	509.9	-4.5	17.5	660.8	638.8	218.6	10.2	1.000151
19500.0	500.2	-5.4	17.0	650.4	637.7	222.9	8.0	1.000149
20000.0	490.4	-6.5	17.1	640.3	636.3	221.2	6.4	1.000146
20500.0	480.8	-7.6	17.2	630.4	635.0	210.6	6.6	1.000144
21000.0	471.3	-8.7	17.3	620.7	633.6	200.0	7.5	1.000141
21500.0	462.1	-9.9	17.4	611.1	632.3	198.9	6.8	1.000139
22000.0	453.0	-11.0	17.4	601.7	630.9	193.7	6.3	1.000137
22500.0	444.1	-12.1	17.5	592.4	629.6	203.9	6.0	1.000134
23000.0	435.4	-13.2	17.6	583.3	628.2	203.5	6.2	1.000132

STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 61 1133 HRS:IDT  
ASCENSION NO. 370

UPPER AIR DATA  
150020378  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 19 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.8	-14.3	17.7	574.3	626.0	204.4	6.3	1.000130
24000.0	410.4	-15.5	17.8	565.5	625.5	191.2	5.5	1.000128
24500.0	410.2	-16.6	17.9	556.8	624.1	177.5	4.8	1.000126
25000.0	402.1	-17.7	18.0	548.3	622.7	163.8	4.3	1.000124
25500.0	393.9	-18.9	18.0	539.5	621.3	160.9	4.1	1.000122
26000.0	385.7	-20.0	18.0	530.8	619.9	165.2	3.8	1.000120
26500.0	377.7	-21.2	18.0	522.2	618.4	155.6	3.6	1.000118
27000.0	369.9	-22.4	18.0	513.7	617.0	142.5	3.6	1.000116
27500.0	362.2	-23.6	18.0	505.4	615.5	121.0	4.1	1.000114
28000.0	354.7	-24.7	18.0	497.3	614.1	105.6	4.9	1.000112
28500.0	347.3	-25.9	18.0	489.3	612.6	95.7	6.0	1.000110
29000.0	340.1	-27.1	18.0	481.4	611.2	93.3	6.7	1.000108
29500.0	333.0	-28.3	18.0	473.7	609.7	95.1	6.9	1.000106
30000.0	326.1	-29.4	18.0	466.1	608.2	94.7	6.9	1.000104
30500.0	319.3	-30.6	18.0	458.6	606.8			1.000103
31000.0	312.7	-31.8	18.0	451.3	605.3			1.000101
31500.0	306.2	-33.0	18.0	444.1	603.8			1.000099

STATION ALTITUDE 3989.00 FEET MSL  
8 JUNE 81 1133 HRS MDT  
ASCENSION NO. 378

MANDATORY LEVELS  
1590020370  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

TABLE 20

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4947.	31.4	4.2	18.		1.0	5.1
800.0	6712.	26.1	1.1	19.		320.8	5.3
750.0	8557.	21.1	-2.0	21.		300.4	16.0
700.0	10496.	16.0	-5.1	23.		280.8	20.1
650.0	12541.	10.6	-7.0	28.		253.8	16.6
600.0	14705.	4.8	-9.8	34.		199.5	10.3
550.0	17009.	-8.	-20.4	21.		197.2	14.2
500.0	19483.	-5.4	-26.5	17.		222.9	6.0
450.0	22165.	-11.3	-31.2	17.		201.5	6.2
400.0	25092.	-18.0	-36.4	18.		160.1	4.3
350.0	28319.	-25.5	-42.7	18.		98.1	5.7
300.0	31924.	-34.1	-50.0	18.			